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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/899,530	07/06/2001	Toshiya Kojima	Q64665	3383

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EXAMINER

LIANG, LEONARD S

ART UNIT PAPER NUMBER

2853

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/899,530

Applicant(s)

KOJIMA ET AL.

Examiner

Leonard S Liang

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7-9,11 and 12 is/are rejected.
- 7) ☒ Claim(s) 3, 6, 10, 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

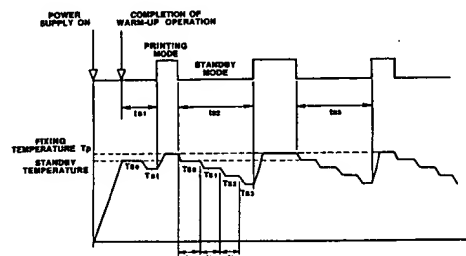
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-2, 4-5, 7-9, 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakamura et al (US Pat 5321478).

Nakamura et al (US Pat 5321478) discloses:

- {claim 1} An image-forming device (column 1, lines 8-12) comprising: a heating device (column 1, lines 29-30); a control device which controls the heating device by on/off control (column 1, lines 29-47), and alters a period of on/off control in accordance with control modes (figure 16, reference Printing Mode, Standby Mode, ts1, ts2, ts3), the control modes including a printing mode for maintaining the heating drum at the predetermined temperature during image-formation (figure 16, reference printing mode; column 1, lines 31-38), and at least one ordinary mode which is used at times other than during image formation (figure 16, reference standby mode; column 1, lines 31-38), wherein, if a period of on/off control of the printing mode is T1 and a period of on/off control is T0, then $T1 < T0$ (figure 16, reference Printing Mode, Standby Mode, ts2)

FIG.16

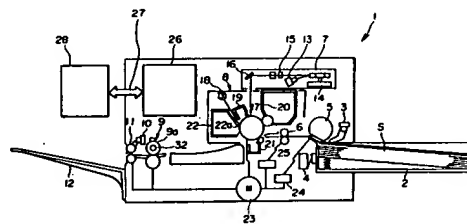


- {claim 2} standby mode (column 1, lines 31-38; figure 16, reference Ts0); pre-heating mode (figure 16, reference Ts1, Ts2, Ts3; column 1, lines 57-60; column

2, lines 7-10) ; if the period of on/off control of the printing mode is T1, a period of on/off control of the standby mode is T2 and a period of on/off control of the pre-heating mode is T3, then at least one of the following relationships: $T1 < T2$ and $T1 < T3$ is satisfied ($T1 < T3$; figure 16, reference Ts1, Ts2, Ts3)

- {claim 4} information of the image is recorded onto a photosensitive material by exposure (figure 1, reference 18; column 4, lines 67-68), and the image is formed on a transfer material which is superposed with the photosensitive material at the heating drum (column 1, lines 14-22). As drafted, this reads on the claimed invention.

FIG.1



- {claim 5} the control device alters a duty ratio of on/off control in response to a difference between a current temperature of the heating drum and the pre-determined temperature (column 1, lines 42-47)
- {claim 7} when image formation has finished, the printing mode is deselected and the standby mode is selected (figure 16, reference Printing Mode, Standby Mode)
- {claim 8} if the standby mode is selected and no image-formation is performed for a predetermined period of time, then the pre-heating mode is selected (figure 16, reference Ts0, Ts1)
- {claim 9} in the pre-heating mode, the heating drum is maintained at a temperature lower than the predetermined temperature (figure 16, reference Ts0, Ts1)
- {claim 11} information of the image is recorded onto a light and heat sensitive material by exposure, and the image is formed on the light and heat sensitive

material by heating at the heating drum (column 1, lines 14-30; column 4, lines 67-68)

- {claim 12} An image-forming device in which image information is exposed onto and carried by photosensitive material, and an image is formed on transfer material by the transfer material being superposed with the photosensitive material at a heating drum heated to a predetermined temperature (as taught in claim 4), the device comprising: a heating device which heats the heating drum; and a control device which controls the heating device by on/off control, and alters a period of on/off control in accordance with control modes, and alters a period of on/off control in accordance with control modes (as taught in claim 1), the control modes including a printing mode for maintaining the heating drum at the predetermined temperature during image-formation, a standby mode for keeping the heating drum in a state such that image information can be initiated promptly, and a pre-heating mode for reducing power consumption of the heating drum while keeping the heating drum in a state such that image-formation can be initiated in a short time (as taught in claim 2), wherein, if a period of on/off control of the printing mode is T_1 , a period of on/off control of the standby mode is T_2 and a period of on/off control of the pre-heating mode is T_3 , then $T_1 \leq T_2$ (figure 16; notice the widths of Printing Mode and Standby Mode T_{s0} are the same), $T_1 \leq T_3$ (figure 16, notice the width of Printing Mode is less than that of Pre-Heat Mode $T_{s1} + T_{s2} + T_{s3}$), and at least one of T_2 and T_3 is greater than T_1 ($T_3 > T_1$ as taught in claim 2 above).

Allowable Subject Matter

2. Claims 3, 6, 10, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 3 and 13 includes the limitation of "The image-forming device...wherein the periods T_1 , T_2 and T_3 are set so as to satisfy the relationship $T_1 < T_2 < T_3$," which was not found, taught, or suggested in the prior arts.

Claim 6 includes the limitation of "The image-forming device...wherein from a time when a power source of the image-forming device is turned on until a time when the predetermined temperature is reached, the period of on/off control of the heating drum is set to a period the same as the period of on/off control of the printing mode, and when the predetermined temperature has been reached, the ordinary mode is selected for maintaining the predetermined temperature," which was not found, taught, or suggested in the prior arts.

Claim 10 includes the limitation of "The image-forming device...wherein there is another temperature control signal at the image-forming device, and a temperature control signal of the heating drum has a phase difference with respect to the other temperature control signal," which was not found, taught, or suggested in the prior arts.

Response to Arguments

3. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

The examiner agrees with the applicant that the original combination of Hirose (US Pat 6018140) in view of Sakai does not adequately disclose a standby and pre-heat mode, and thus does not disclose that the period is altered in accordance with control modes. However, as can be seen above in Nakamura et al (US Pat 5321478), a standby and preheat mode are explicitly disclosed, as well as the other limitations argued by the Applicant. Therefore, the applicant's arguments are considered moot in view of the new grounds of rejection.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nishikawa et al (US Pat 5109255) discloses a temperature control system.

Hutner (US Pat 4006985) discloses a xerographic apparatus having time controlled fusing.

Kimoto (US Pat 5761575) discloses an electrical apparatus having a plurality of elements different in starting period.

Saito et al (US Pat 5903799) discloses an image heating apparatus with energization control.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S Liang whose telephone number is (703) 305-4754. The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (703) 308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

lsl LSL
October 28, 2002


John Barlow
Supervisory Patent Examiner
Technology Center 2800